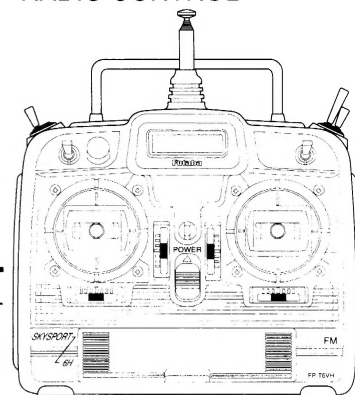


SKYSPORT-6H

INSTRUCTION MANUAL

D60504

Futaba[®]
DIGITAL PROPORTIONAL
RADIO CONTROL



FP-6VH

FM 6 CHANNEL
HELICOPTER R/C SET

FOREWORD

Thank you for selecting the Futaba SKYSPORT-6H. The SKYSPORT-6H is an easy-to-use digital proportional R/C set for all classes of R/C aircraft hobbyists, from beginners to advanced pilots. It has an outstanding array of functions needed by all classes of pilots.

To enjoy its functions to the fullest and to ensure safe flying, please read this manual carefully before using your set.

After reading this manual, store it in a safe place. If

you encounter any difficulties while using your set, please refer to the appropriate sections in this manual.

In addition to this manual, please read all of the manuals included with your helicopter, engine and other flight related equipment you may use.

To help ensure safe use, pay particular attention to the precautions printed throughout this manual and indicated by an exclamation mark **!**.

ATTENTION

1. Application of Product

This product is not intended for use in any application other than for the control of models for hobby and recreational purposes. This product is subject to regulations of the Ministry of Radio/Telecommunications and is restricted under Japanese law to such purposes. The laws of other countries may similarly restrict the use of this product. Futaba is not responsible for any use that is not in compliance with applicable law.

2. Exportation of Product

If the product is exported from Japan, the prior approval of the Ministry of Radio/Telecommunications is required regarding the country of destination. If this product is reexported from other countries, it may be subject to restrictions on such reexport and prior approval of government authorities may be required.

3. Modification, Adjustment & Replacement of Parts

Futaba is not responsible for any use of this product that is not in compliance with applicable law and disclaims all responsibility for any modification or alteration of the product, including the incorporation of the product into other products by third parties, that is not in compliance with applicable law.



Ni-Cd

ATTENTION:

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

THE FOLLOWING STATEMENT APPLIES TO THE RECEIVER:
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

1. No part of this manual may be reproduced in any form without prior written permission.
2. The contents of this manual are subject to change without prior notice.
3. This manual has been carefully written, but please feel free to write

to Futaba if you find that any corrections or clarifications should be made.

4. Futaba is not responsible for the results of the use of this product by the customer.
5. Futaba and SKYSPORT are a registered trademark.

PRECAUTIONS

To use your R/C set safely, please observe the following precautions:

(Operating precautions)

- When powering up the system, first turn on the transmitter power, then turn on receiver power. When powering down the system, first turn off the receiver power, then turn off the transmitter power. If the power is turned on or off in the reverse order the control servos may move erratically causing engines or electric motors to race unexpectedly and possibly resulting in serious injury to the user or bystanders. Before turning on the power, set the throttle stick to the maximum slow position.
- Extend the transmitter antenna to its full length. If the antenna is not extended fully, the transmitter output will drop and the range of receivable transmission will be shortened.
- Never fly two or more models on the same frequency at the same time. Before flight, use a frequency monitor or other device to check that the frequency is not in use. Simultaneous flight on the same band is extremely dangerous because it will cause interference and loss of control. Differences in modulation method or signal format (AM, FM, PCM, etc.) does not mean that flights can be made on the same band.
- Do not forget to recharge the Nicd battery before each flight. Needless to say, a dead battery will cause loss of control and a crash. Always check the discharge time on the ground and provide a margin of safety when determining the remaining flight time. When recharging the Nicd battery, observe the charging current and charging time specified on the battery. Charging the battery at a current and time exceeding the specified values will not only damage the battery by overcharging, but will also cause overheating and other dangerous conditions.

- Do not fly on rainy days. Even in a drizzle, water can enter the transmitter through the antenna and sticks and cause faulty operation. The resulting loss of control may cause a crash or the engine to race and is very dangerous.
- When placing the transmitter on the ground during flight preparations, make certain that the transmitter cannot be easily toppled by the wind or other means. If it tips over while the engine is running and the throttle stick is inadvertently moved to the high position as result, serious injury to the operator or others could result.
- Always test your digital proportional R/C set before flight. As a simple test method, before starting the engine, retract the transmitter antenna fully and operate each servo from a distance of about 5m and check if the servos follow the movement of their control sticks. If a servo does not follow the movement of its control stick, extend the transmitter antenna to its full length, increase the distance on the ground, and repeat the test. If the receiving range is still short, discontinue flight and check the set.

(Flying field)

- In general, when a model is flown at high speed and / or the flying range is large, even more caution is necessary. A safe method is to fly at an exclusive flying field belonging to a club, etc. However, the presence of spectators, wind direction, etc. must be constantly monitored. In areas near high tension lines, high buildings, and communication facilities, consideration must be given not only to normal flight dangers, but also to possible loss of control caused by radio wave interference. Because R/C radio waves have a fairly long range, a location at least 3 km / 2 miles from other R/C flying fields and R/C control circuits is necessary.

SET CONTENTS / RATINGS

	SKYSPORT-6H			
Set name	Basic		w/Gyro	
Transmitter	FP-T6VH			
Receiver	FP-R116FB, FP-R138DF, or FP-R127DF			
Servos	FP-S3001x4 or FP-S148x4		FP-S3001x4 or FP-S148x5	
Gyro	_____		FP-G154	
Battery (Transmitter)	NT-8iB	_____	NT-8iB	_____
Battery (Receiver)	NR-4RB or NR-4J	_____	NR-4RB	_____
Battery charger	x1	_____	x1	_____
Extension cord	x1		_____	
Others	Receiver switch, servo horns, flat screwdriver			

Transmitter FP-T6VH

Operating system: Two-stick, 6 channels, w/helicopter function
Transmitting frequency: 35, 36, 40, 41, 50 or 72MHz band
Modulation: FM (Frequency Modulation)
Power requirement: 9.6V Nicd battery(NT-8iB)
Current drain: 180mA

Receiver FP-R116FB

Receiving frequency: 35, 36, 40, or 41MHz band
Intermediate frequency: 455kHz
Power requirement: 4.8V or 6V Nicd battery (shared with servos)
Current drain: 22mA
Size: 33.4X50.4X20.5mm
Weight: 30g / 1.06oz

Receiver FP-R138DF

Receiving frequency: 35MHz band
Intermediate frequency: 1st IF 10.7MHz, 2nd IF 455kHz

Power requirement: 4.8V or 6V Nicd battery (shared with servos)
Current drain: 12mA
Size: 65X36X21.5mm
Weight: 39g / 1.38oz

Receiver FP-R127DF

Receiving frequency: 50 or 72MHz band
Intermediate frequency: 1st IF 10.7MHz, 2nd IF 455kHz
Power requirement: 4.8V or 6V Nicd battery (shared with servos)
Current drain: 10mA
Size: 64.3X35.8X21.0mm
Weight: 40.5g / 1.43oz

Servo FP-S3001/FP-S148

Control system: Pulse width control
Operating angle: One side 45 degree min. (including trim)
Power requirement: 4.8V or 6V Nicd battery (shared with receiver)
Current drain: 8mA (at idle)
Output torque: 3kg-cm / 42oz-in
Operating speed: 0.22 sec/60 degree
Size: 40.4x19.8x36mm
Weight: 45.1g / 1.59oz(S3001), 44.4g / 1.57oz(S148)

Gyro FP-G154

Power requirement: 4.8V
Current drain: Motor 100mA, amp 20mA
Dimensions: Gyro body 42x34x39mm, Control amp 27x48x6mm
Weight: 102g / 3.6oz

Nicd battery NT-8iB

Voltage: 9.6V
Capacity: 500mAh

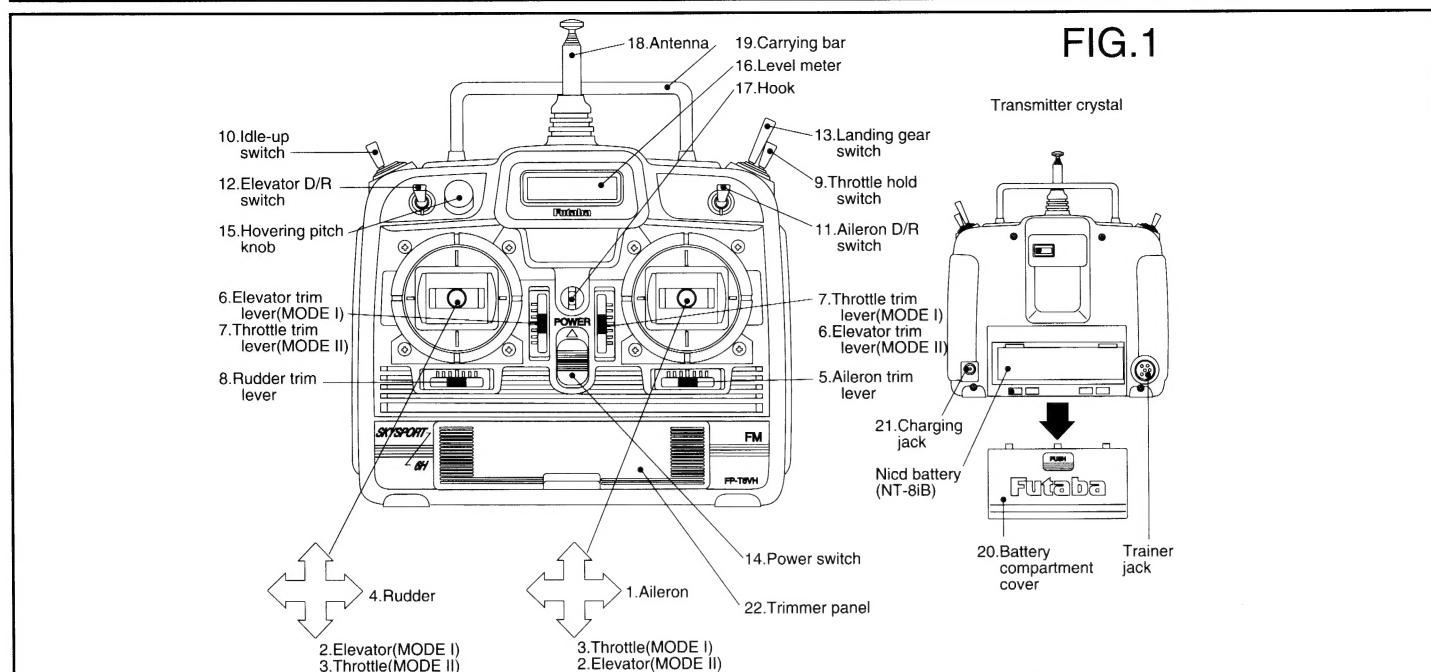
Nicd battery NR-4RB

Voltage: 4.8V
Capacity: 1000mAh
Dimensions: 47x69x18.5mm
Weight: 112g / 3.95oz

Nicd battery NR-4J

Voltage: 4.8V
Capacity: 500mAh
Dimensions: 51x58x15mm
Weight: 95g / 3.35oz

TRANSMITTER CONTROLS



Alarm tone

Power on:

If the throttle hold or idle-up function is active and the power switch is turned on, a beep beep beep beep, beep beep beep beep, ... interrupted tone will be heard. When this happens, turn off the mixing switch before starting engine.

Low battery:

When the transmitter battery voltage drops, a continuous beeping sound will be heard. In this case, land immediately and charge the battery.

Confirmation tone

Power on:

When the power switch is turned on, if the set starts normally, a beep beep confirmation tone will be heard.

Switch switching:

Each time a mode switch or servo reversing switch on the trimmer panel is switched, a beep confirmation tone is generated. However, for the rotor direction switch, this tone is generated when the revolution mixing function is ACT (active).

TRANSMITTER OPERATION

The servo reversing switches are assumed to be in the normal position in the descriptions in this section. When the switches are in the reverse position, operation is the opposite of that described here. The numbers in the text correspond to the numbers in Fig. 1.

Servos operation

1. Aileron 2. Elevator 3. Throttle 4. Rudder

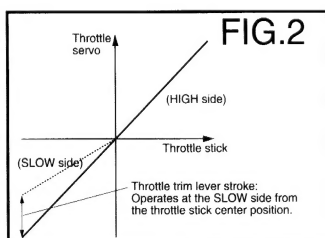
Servos trimming

5. Aileron trim lever
6. Elevator trim lever
7. Throttle trim lever with ATL

The throttle trim lever operates only when the throttle stick is at the SLOW side as shown in the figure at the right (FIG.2).

*Since the HIGH side does not change even when the SLOW side is adjusted, it is very convenient when connecting the linkage.

8. Rudder trim lever



Switches and knobs

9. Throttle hold switch (TH.HOLD)

When this switch is set to ON, the throttle servo stops at the position set at the throttle hold trimmer (TH.HOLD) and only the pitch servo is controlled by the throttle stick. This is used at autorotation.

When this switch is off, the throttle and pitch control are mixed.

10. Idle-up switch (IDLE UP)

When this switch is set to ON, the the throttle servo maximum slow position is set to the position set by the idle-up trimmer (IDLE UP). When this switch is set to OFF, the throttle servo returns to the slow position set by the throttle trimmer.

11. Aileron dual rate switch (AIL.D/R)

When this switch is set to ON, the aileron servo travel is narrowed to the angle set by the aileron dual rate trimmer (AIL.D/R). The up position is ON. (Setting range: 30 to 100%)

12. Elevator dual rate switch (ELV.D/R)

When this switch is set to ON, the elevator servo travel is narrowed to the angle set by the elevator dual rate trimmer (ELV.D/R). The up position is ON. (Setting range: 30 to 100%)

13. CH5 (landing gear) switch

This is a spare switch channel. It is used as the sensitivity switch when a gyro with sensitivity switching is used.

14. Power switch

The up position is ON.

15. Hovering pitch knob (HOV.PIT.)

This function trims the pitch near the hovering point. It can be adjusted without changing the HIGH and LOW points. (Adjustment range: 20% of total travel)

Others

16. Level meter

This meter indicates the transmitter battery voltage.

! When the needle deflects to the red boundary, recharge the battery.

17. Hook

For optional neck strap.

18. Antenna

When using the transmitter, extend the antenna to its full length.

19. Carrying handle

Use this handle to carry the transmitter from place to place.

20. Battery compartment cover

Open this cover when replacing or testing the batteries.

21. Charging jack

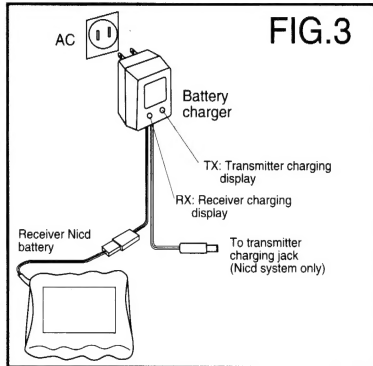
This is the charging jack when a Nicd battery is used in the transmitter.

(Nicc battery charging method)

Never try to recharge a dry cell battery. Charging will cause abnormal heating, destruction, or other danger.

Before using your set, always charge the Nicd batteries.

Connect the transmitter side (Nicc system only) and receiver side connectors of the battery charger to the transmitter charging jack and receiver servo Nicd battery and plug the battery charger into an AC outlet as shown in the figure (FIG.3). The charging LED glow to show that the battery is being charged.



* Normally charge the battery for about 15 hours. If the battery has not been used for some time, discharge and recharge it two or three times.

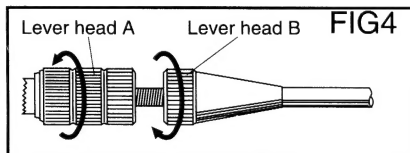
* The transmitter and receiver Nicd batteries can be charged simultaneously or separately.

(Non-slip adjustable lever head)

The length of the lever head can be adjusted to fit the operator.

1. Unlock lever heads A and B by turning them in opposite directions as shown by the arrows in the figure (FIG.4).

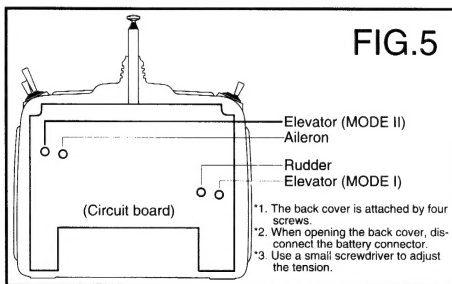
2. Adjust the stick to the most comfortable length and lock it by turning the heads in the directions opposite those shown by the arrows.



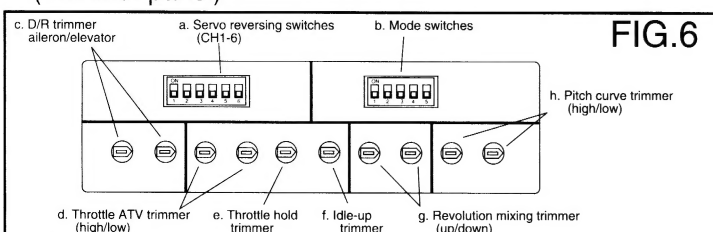
(Stick lever spring tension adjustment)

The spring tension can be set by removing the transmitter back cover and turning the screw for each stick as shown in the figure (FIG.5). Set the spring tension for the best stick feel. When adjusting the stick spring, set the throttle stick to the center.

Note: For Mode I, adjust the aileron stick spring when throttle stick is at the center point.



(Trimmer panel)



a. Servo reversing switch (SERVO REVERSER)

The servo reversing switches reverse the direction of travel of the servos. The lower position is the normal position. (Channels 1 to 6)

b. Mode switches

(1) Throttle hold function ACT/INH switch

To activate the throttle hold function, set this switch to the ACT position. To deactivate the throttle hold function, set this switch to the INH position.

(2) Idle-up function ACT/INH switch

To activate the idle-up function, set this switch to the ACT position. To deactivate the idle-up function, set this switch to the INH position.

(3) Revolution mixing ACT/INH switch

To activate the revolution mixing function, set this switch to the ACT position. To deactivate the revolution mixing function, set this switch to the INH position.

(4) Rotor direction switch (CW/CCW)

This switch selects the mixing direction to match the direction of rotation of the main rotor. (When the main rotor rotates clockwise, as viewed from the top, set this switch to the CW position and when the main rotor rotates counterclockwise, set this switch to the CCW position.)

(5) Pitch channel switch (PIT.CH.)

The pitch channel receiver output can be changed from CH6 to CH5. However, when CH5 is made the pitch channel, CH6 becomes the landing gear channel.

* It is very convenient to use with 5 channel receiver.

c. D/R trimmer aileron (AIL)/elevator (ELV)

When the D/R switches are turned on, the travel of each servo can be narrowed with this trimmer. (Adjustment range: 30-100% of total travel)

d. Throttle ATV trimmer High side (HI)/low side (LOW)

The high side and low side of the throttle servo can be adjusted independently when connecting the linkage. (Adjustment range: 30-100% of total travel)

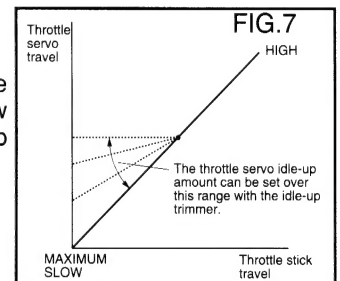
e. Throttle hold trimmer (TH.HOLD)

This trimmer sets the throttle servo stop position when the throttle hold switch is set to ON. The total travel can be adjusted.

f. Idle-up trimmer

(IDLE UP)

This trimmer adjusts the throttle servo maximum slow position when the idle-up switch was set to ON. (Fig. 7)

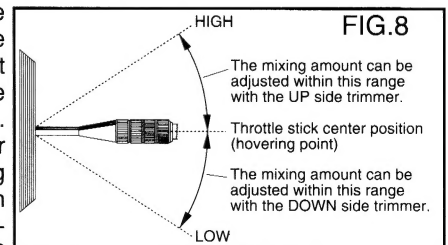


g. Revolution mixing trimmer

up side (UP) / down side (DOWN)

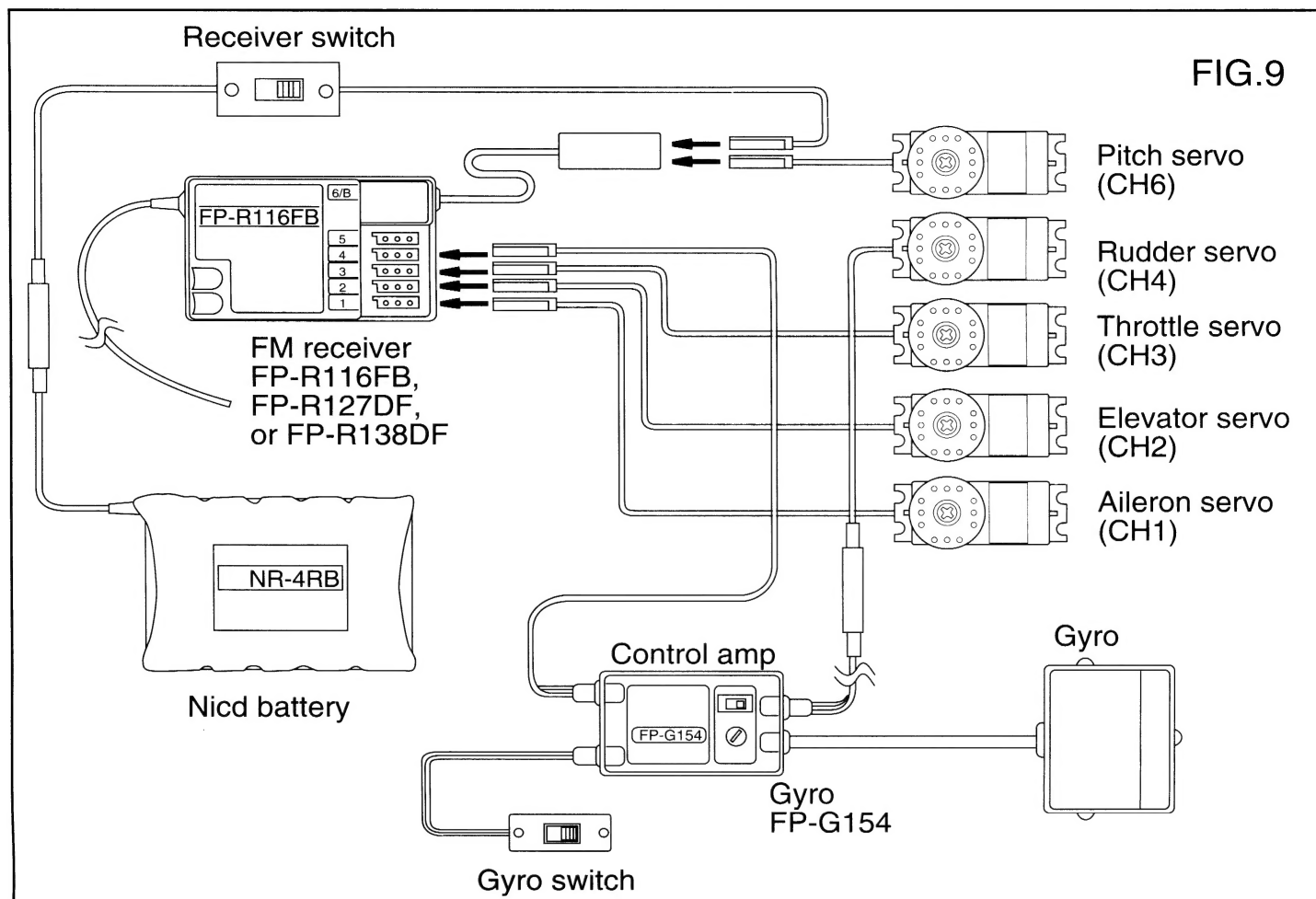
This trimmer adjusts the pitch -> rudder mixing amount. Set the mixing amount to approximately 5 divisions at the UP side and 7 divisions at the DOWN side as a criteria. Make final adjustments to match the model.

The DOWN side trimmer adjusts the mixing amount at the low side from the hovering position. The UP side trimmer adjusts the mixing amount at the high side from the hovering position. The UP side and DOWN side can be adjusted independently, with the throttle stick center position (hovering point) as the standard. (Fig. 8)



h. Pitch curve trimmer High side (HI)/low side (LOW)

The HIGH side and LOW side travel of the pitch control servo travel can be independently adjusted to match the engine torque curve. (Adjustment range: 30-100% of total travel)



(Installation precautions)

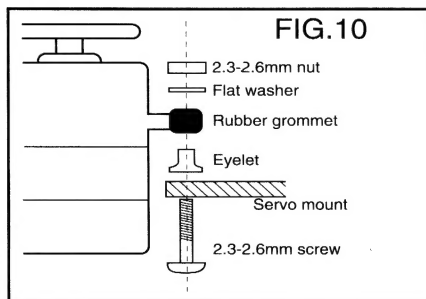
When installing the receiver, servos, and other parts to the fuselage, observe the following precautions:

Servo travel

Operate each servo horn over its full travel and check that the pushrod does not bind and or is not too loose. Unreasonable force applied to the servo horn will adversely affect the servo and drain the battery pack very quickly. Make sure that the free travel range of each control surface or mechanism somewhat larger than the full control travel (including trim) of the servo horn. Adjust the servo horns so that they move smoothly even when the trim lever and stick are operated simultaneously in the same direction.

Servo installation

Install the servos with the rubber grommets and eyelets supplied with the set. Do not tighten the screws too tight. If the servo case directly contacts the fuselage, the rubber grommets will not serve its purpose.



Noiseless parts

When using a model with a construction that connects the mainframe and tail drive shaft with conductive materials, use a plastic bearing case, plastic joints, or other noise less parts sold by the model helicopter manufacturer and electrically insulate the main frame from the tail side.

Receiver power switch installation

When installing the switch harness to the fuselage, cut a rect-

angular hole slightly larger than the full travel of the switch in the fuselage and install the switch so that it moves smoothly from ON to OFF. Also install the switch where it will not be exposed to engine oil or dust and dirt. Generally, install the receiver switch on the opposite side of the muffler exhaust.

Receiver antenna

Although the receiver antenna may appear to be too long, do not cut it or fold it back. Changing the length of the receiver antenna will lower the receiving sensitivity and shorten the flight range. Also fasten the receiver antenna wire by passing it through a vinyl tube as far away from the metal frame as possible.

Receiver vibration and water proofing

The receiver contains precision electronic parts. Besides being susceptible to vibration and shock, the entry of water will also cause erroneous and dangerous results and has been associated with crashes and other accidents. Wrap the receiver in foam rubber or take other vibration countermeasures. Also waterproof the receiver by placing it in a plastic bag and securing the open end of the bag with a rubber band. Do the same with the receiver and servo battery.

Processing of cords

Be sure that the cords do not touch the corners of the metal parts of the model. The wire may be broken by vibration and is very dangerous.

Servo horns

Spare horns are supplied. Use them as needed.

Extension cord

Use the servo extension cord if needed for your particular fuselage.

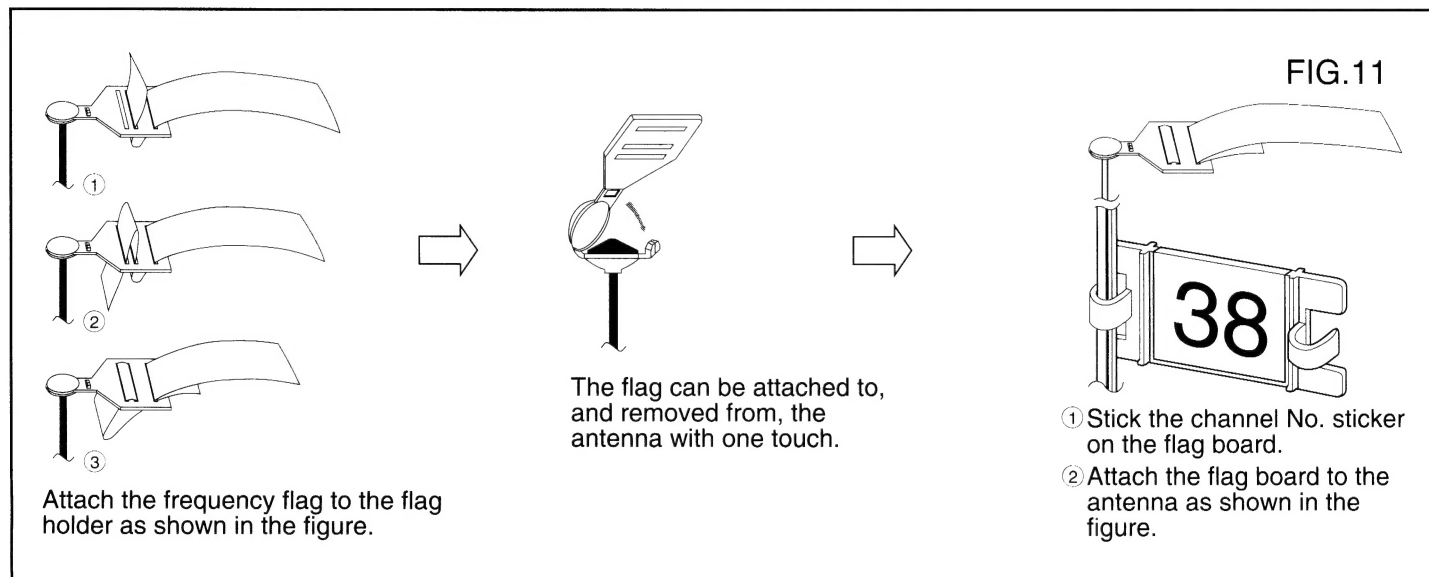
Didital Proportional Frequencies For U.S.A.

- The frequency of Futaba digital proportional sets can be changed within their own band. There are 2 different bands for you to choose from (27 MHz and 72-75 MHz). Please see chart listed below for specific frequency and its intended use. Please note there are specific frequencies allocated for aircraft only and surface only use.
- The frequency can be changed within the same BAND. However, Futaba recommends that you return your system to our

factory service department for frequency changing, as tuning may be necessary for proper operation. Changing frequency from one band to another is NOT possible.

- Always change frequency flag when frequency is changed. The frequency flag is to be attached to the top of antenna and the channel designation to the base. (See Drawing)
- It is illegal to change crystals on 72-75 MHz bands in the U.S.A. unless performed by a licensed technician.

Antenna Frequency Flag



Frequency, Channel No. Flag Color For U.S.A.

26-27 MHz-Aircraft/car/boat

	Color
26.995	Brown
27.045	Red
27.095	Orange
27.145	Yellow
27.195	Green
27.255	Blue

50/53 MHz-Aircraft/car/boat-Fcc Amature Licence required (2 and 3 channels not produced on these frequencies).

Channel No.	Color
50.800 RC00	53.100 Black-Brown
50.820 RC01	53.200 Black-Red
50.840 RC02	53.300 Black-Orange
50.860 RC03	53.400 Black-Yellow
50.880 RC04	53.500 Black-Green
50.900 RC05	53.600 Black-Blue
50.920 RC06	53.700 Black-Violet
50.940 RC07	53.800 Black-Gray
50.960 RC08	
50.980 RC09	

72MHz-Aircraft only

72.010 11	72.210 21	72.410 31
72.030 12	72.230 22	72.430 32
72.050 13	72.250 23	72.450 33
72.070 14	72.270 24	72.470 34
72.090 15	72.290 25	72.490 35
72.110 16	72.310 26	72.510 36
72.130 17	72.330 27	72.530 37
72.150 18	72.350 28	72.550 38
72.170 19	72.370 29	72.570 39
72.190 20	72.390 30	72.590 40

72.610 41	72.810 51
72.630 42	72.830 52
72.650 43	72.850 53
72.670 44	72.870 54
72.690 45	72.890 55
72.710 46	72.910 56
72.730 47	72.930 57
72.750 48	72.950 58
72.770 49	72.970 59
72.790 50	72.990 60

75 MHz-Car/boat only

75.410 61	75.610 71	75.810 81
75.430 62	75.630 72	75.830 82
75.450 63	75.650 73	75.850 83
75.470 64	75.670 74	75.870 84
75.490 65	75.690 75	75.890 85
75.510 66	75.710 76	75.910 86
75.530 67	75.730 77	75.930 87
75.550 68	75.750 78	75.950 88
75.570 69	75.770 79	75.970 89
75.590 70	75.790 80	75.990 90

ADJUSTMENTS

1. General model adjustments

(Model linkage)

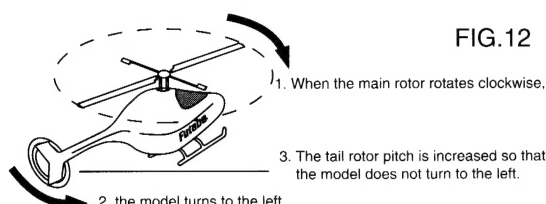
Make the basic model linkage connections and adjustments specified in the fuselage manufacturer's assembly manual. At this time, turn off the D/R, idle-up, and throttle hold switches, unless otherwise specified. When the operating direction of a servo is wrong, correct it with the corresponding servo reversing switch.

*Adjust the throw and neutral position by adjusting the linkage. After connecting the linkage, make fine adjustments with the throttle ATV and pitch curve functions.

(Revolution mixing)

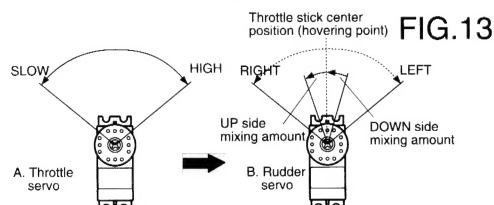
Description of function

When the main rotor rotates, the model attempts to turn in the opposite direction. To cancel this reaction torque, the pitch of the tail rotor (rudder) must be increased. Revolution mixing performs this operation simultaneously with the throttle (engine control) and is necessary to fly a helicopter. (Operation is much easier when a rate gyro is used.)



When the throttle (engine control) stick is moved from the SLOW side to the HIGH side, the throttle servo operates as shown at A of Fig. 13. If revolution mixing is applied at this time, the mixing amount to the rudder servo increases as the number of revolution mixing trimmer divisions increases. Right rudder stick operates the rudder servo as shown in B of Fig. 13. However, if the throttle (engine control) stick is in the SLOW position, the neutral position is from the left and if the throttle (engine control) stick is in the high position, the neutral position is from the right.

The revolution mixing UP and DOWN side reference points are the throttle stick center position (hovering point).



Adjustment procedure

Before making any adjustments, activate the revolution mixing function by setting the revolution mixing ACT/INH switch on the trimmer panel to ACT.

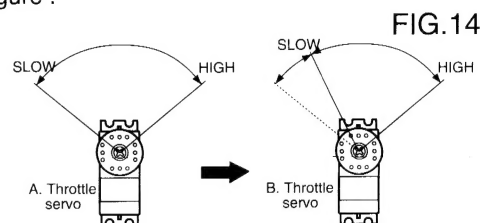
1. Check the direction of operation of each servo. To reverse the direction of operation, switch the reversing switch.
2. Always set the idle-up switch and throttle hold switch to OFF (pushed to opposite side).
3. Make the basic adjustments specified by the model helicopter manufacturer.
4. Check the left and right (up and down) throw of each servo. If the throw is incorrect, correct it by changing the position of the servo horn hole, etc.
5. Set the throttle stick to the center position and install and linkage to the servo horn at the neutral position.
6. Set the revolution mixing UP side trimmer to about five divisions and the revolution mixing DOWN side trimmer to about seven divisions.
7. Check the engine throttle linkage. The throttle is opened fully at the throttle stick HIGH (up) position. The throttle is closed fully at the throttle stick MAXIMUM SLOW (down) and throttle trim maximum slow (down) positions. Use ATL (Adjustable Throttle Limit) trim as much as possible. This is convenient because the HIGH side does not change even if the LOW side is changed. Then operate the throttle stick over its full stroke and set it so that the pitch control servo operates over its maximum travel. Select the servo horn hole position so that the main rotor pitch variation width matches the model helicopter manufacturer's specification.

8. After starting the engine and adjusting the needle after linkage is complete (after checking the operating direction and operation amount), hover and adjust the aileron and elevator trim. Next, make the main rotor pitch at hovering somewhat large with the model linkage.
9. Adjust the model linkage so that the rudder trim is the neutral position when hovering.
10. After adjusting all the trim levers, adjust revolution mixing.
11. When the helicopter turns to the right while hovering after lift off, increase the mixing amount by turning the revolution mixing DOWN side trimmer a little to the right (clockwise). When the helicopter turns to the left, reduce the mixing amount by turning the revolution mixing DOWN side trimmer to the left (counterclockwise). Base all revolution mixing adjustments on the hovering point.
12. When the helicopter turns to the left while rising from hovering, increase the mixing amount by turning the revolution mixing UP side trimmer a little to the right (clockwise). When the helicopter turns to the right, reduce the mixing amount by turning the revolution mixing UP side trimmer to the left (counterclockwise).
13. Rate gyro output adjustment
A position about 40% to 80% of the rate gyro control box scale should be sufficient. (Differs somewhat with the model) If the helicopter tail whips back and forth, the gyro adjustment should be decreased.

2. Idle-up adjustment

Description of function

When the idle-up switch is OFF, the throttle servo normally operates as shown in A of the figure (FIG.14). When the idle-up switch is ON and the idle-up trimmer is set to a suitable position, the maximum slow position changes as shown in the figure.



When idle-up is used, the rotor speed can be maintained even when the pitch is dropped during rolls and precision maneuvers are possible.

Adjustment

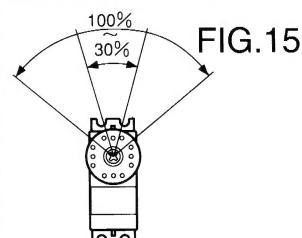
Before making any adjustments, activate the idle-up function by setting the idle-up ACT/INH switch on the trimmer panel to the ACT position.

1. Set the transmitter throttle (engine control) stick to maximum slow and set the idle-up trimmer to about 2 to 2.5 divisions.
2. Next, set the idle-up switch to OFF and start the engine and hover and decide the hovering speed. Then set the idle-up switch to ON and hover and adjust the idle-up trimmer so that the hovering speed is the same as, or somewhat slower than, the hovering speed when the idle-up switch is OFF. When the idle-up trimmer is turned clockwise, the speed increases.

! When starting the engine, or after use, set the idle-up switch to OFF.

3. Aileron and elevator D/R adjustment

When the dual rate switch is set to ON, the aileron and elevator D/R trimmer changes the servo throw within the range shown in the figure (FIG15). The servo throw can be set with a range of 30% to 100% of the maximum stroke by adjusting each trimmer with a Phillips screwdriver. Set to the throw matched to the model. First, use at about 70% to 80%. Beginners can use this to prevent over control and can use larger and smaller throw after they become more experienced.



4. Throttle hold adjustment

Description of function

When the throttle hold switch is set to ON (pulled forward), the throttle servo stops at the position set at the throttle trimmer. Trimmer scale division 0 is maximum travel (same as trim full close). Setting to the high side is possible as the number of divisions increases. When the switch is OFF, the throttle servo is controlled by the transmitter throttle (engine control) stick. This mixing is used for autorotation landings. After the engine is cut or at maximum slow (during practice), only the pitch control servo is operated (pitch up) and safe landing is possible.

Adjustment

Before making any adjustments, active the throttle hold function by setting the throttle hold ACT/INH switch on the trimmer panel to ACT.

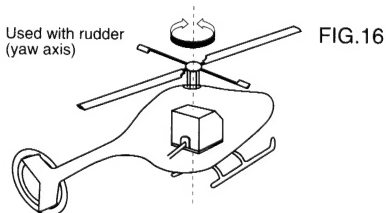
1. Set the throttle (engine control) linkage so that the engine throttle is opened fully when the throttle (engine control) stick and throttle (engine control) trimmer are at maximum slow.
2. Set the throttle hold trimmer so that the engine throttle becomes the same as the throttle trim at idling when the throttle hold switch is turned on (pulled forward) during auto rotation practice.
3. When the throttle hold switch is turned off (pushed back), throttle (engine control) and pitch control servo mixing is performed. When the throttle hold switch is turned on, the throttle servo is held (maximum slow set by throttle trimmer or fully closed) and only the pitch control servo operates.
4. When the hold switch was used for autorotation landing, etc., always set the transmitter throttle stick to slow before turning off the hold switch.

! Before starting the engine, check that the throttle hold switch is off.

5. Gyro adjustment

Rate gyro installation

When the gyro is turned upside down, the output characteristic is reversed. Switch the control amp gyro output characteristic switch.



Gyro

- * Install the gyro near the center of gravity of the model.
- * Install the gyro where there is little engine vibration, etc.
- * Attach the gyro with double-sided adhesive tape. Use two rows of at least 3mm thick, 10mm wide soft double-sided adhesive tape.

Control amp

- * Vibrationproof the control amp with foam rubber, etc.

Adjustment example

Set the gyro output trimmer to about 7. Set the gyro output trimmer so that tail hunting does not occur when hovering into the wind and hunting does not occur when turning and rising. If hunting occurs, lower the gyro output trimmer setting. When the gyro effect is weak and unstable, increase the gyro output trimmer setting. Adjustment is combined for hovering and flying. When sensitivity switching is necessary, use the FP-G153BB rate gyro sold separately.

Power supply

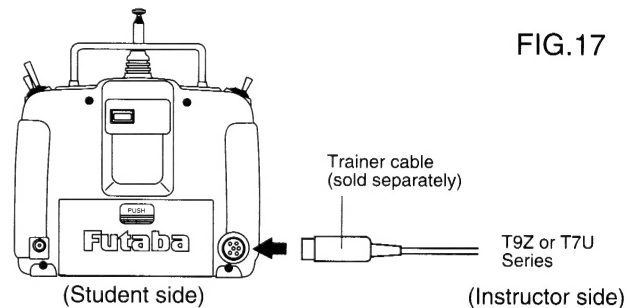
- * Use the Nicd battery as a common power supply with the receiver servos.
- * When a rate servo is installed, the operating frequency of the rudder servo increases and the power consumed by the gyro is added to the normal power consumption. Since increasing the gyro output increases the servo operating frequency then, the power consumption also increases and the number of flights possible decreases. (Check battery voltage after and before each flight.)

Gyro usage precautions

- * When the G154 gyro power switch is turned off, the motor stops, but the control amp continues to operate. Therefore, fuselage vibration may cause the rudder servo to operate. When flying with the gyro power switch is turned off, always set the gyro output trimmer to 0.
- * Do not subject the gyro to vibration and shock.
- * Do not disassemble or modify the gyro. If the gyro was disassembled, neutral adjustment will be adversely affected even if it is reassembled.

6. Using the trainer function

The SKYSPORT-6H trainer function lets you practice flying as a student by connecting the SKYSPORT-6H to an FP-T9Z Series or FP-T7U Series with the special trainer cable (sold separately).



Use

The model can be controlled by the student's transmitter by turning on the instructor's trainer switch and can be controlled by the instructor's transmitter by turning off instructor's trainer switch.

Usage precautions

- ! Never turn on the student side power switch.
- ! Always make the student and instructor side transmitter settings the same.
- ! Set the instructor side modulation method to FM (PPM).

REPAIR SERVICE

Before requesting repair, please refer to this instruction manual again and verify your settings. If you are still experiencing trouble, please request service as follows:

Address

Your nearest Futaba dealer.

Repair information

Describe the trouble in as much detail as possible.

1. Symptom: Including the state of the set when the trouble occurred.
2. Digital proportional set used: Transmitter, receiver, and servo model numbers.
3. Fuselage: Fuselage name and mounting conditions.
4. Your name, address, and telephone number.

Warranty contents

Read the warranty card supplied with your set.

The warranty contents differ with geographic locations.



FUTABA CORPORATION

Makuhari Techno Garden Bldg., B6F 1-3 Nakase, Mihama-ku, Chiba 261-01, Japan
Phone: (043) 296-5119 Facsimile: (043) 296-5124

FUTABA CORPORATION OF AMERICA

4 Studebaker, Irvine California 92718, U.S.A.
Phone: 714-455-9888 Telex: 23-0691227 Facsimile: 714-455-9899